

## Linn County

### Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

10/8/14

10 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Linn County economy.<sup>1</sup>

These 10 sectors have a total direct output of approximately \$69 million and support 828.2 jobs in Linn County. Running the model for all 10 sectors simultaneously produces the following results:

Agriculture Contribution in Linn Co						
Impact Type <sup>2</sup>	Employment	% Employment	Total Value Added <sup>3</sup>	% of Gross Regional Product <sup>4</sup>	Output <sup>5</sup>	% of Gross Regional Product
Direct Effect	828.2	21%	18,715,124.5	5%	68,545,124.3	19%
Indirect Effect	52.5	1%	5,474,653.9	2%	8,910,063.0	3%
Induced Effect	38.3	1%	3,360,549.7	1%	5,346,660.1	2%
Total Effect	919.0	23%	27,550,328.1	8%	82,801,847.4	24%

As shown in the above table, agriculture, food, and food processing supports 919.0 jobs, or 23% of the entire workforce in the county. These industries provide a total economic contribution of approximately \$83 million, roughly 24% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 10 agriculture, food, and food processing sectors is approximately \$28 million, or 8% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 8% of the total economy.

<sup>1</sup> Article on building a contribution analysis in IMPLAN that avoids double counting:

[http://www.implan.com/index.php?option=com\\_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70](http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70)

<sup>2</sup> Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

<sup>3</sup> Value added = labor income + indirect business taxes + other property type income.

<sup>4</sup> GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

<sup>5</sup> Output = intermediate inputs + value added.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

In the top ten by employment, Cattle ranching and farming is the top employer in the agriculture industry with 348.7 employees. This table also shows the amount of jobs that are created by the agriculture industry in Linn County.

Description	Total Employment	Total Output
Cattle ranching and farming	348.7	33,192,379.9
Grain farming	198.2	7,002,082.0
Oilseed farming	169.4	16,568,667.8
Animal production, except cattle and poultry and eggs	44.9	1,382,351.1
All other crop farming	29.5	6,550,565.5
Dairy cattle and milk production	22.0	2,707,461.9
Real estate establishments	19.7	2,529,622.1
Support activities for agriculture and forestry	12.9	19,512.4
Monetary authorities and depository credit intermediation activities	9.7	3,187,745.6
Securities, commodity contracts, investments, and related activities	6.7	783,483.4

The Cattle ranching and farming industry directly contributes approximately \$33 million to Linn County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

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Dairy cattle and milk production	22.0	2,707,461.9
Real estate establishments	19.7	2,529,622.1
Imputed rental activity for owner-occupied dwellings	0.0	1,861,673.7
Animal production, except cattle and poultry and eggs	44.9	1,382,351.1
Electric power generation, transmission, and distribution	1.9	1,381,036.1

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Linn County's economy.

[illegible]

All 105 counties in Kansas have Implan models and agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.